

What is claimed is:

1. A substrate plating apparatus for plating a substrate, comprising:
 - a plating unit including at least one plating chamber for containing a plating solution for plating a metal layer onto a semiconductor substrate;
 - a concentration analyzing device to analyze concentrations of the plating solution, wherein said concentration analyzing device includes a metal ion concentration analyzer and a plating additive concentration analyzer; and
 - a plating solution preparing unit for preparing the plating solution based on results from said concentration analyzing device.